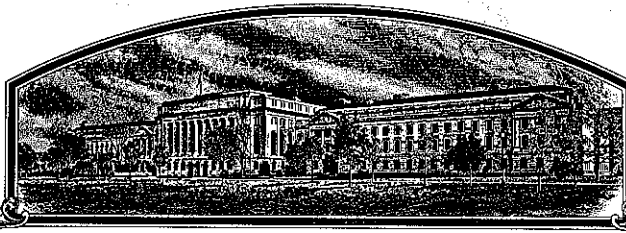


No.

9500012



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME;

Western Plant Breeders

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED, PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE FOREGOING PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Brooks'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirty-first day of October in the year of our Lord one thousand nine hundred and ninety-five.

Attest:

Margaret A. Hunter

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

John F. Blitchman
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

| | | | |
|--|---|---|--|
| 1. NAME OF APPLICANT(S) (as it is to appear on the Certificate) WESTERN PLANT BREEDERS, inc. | | 2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO. PH988-131 | 3. VARIETY NAME BROOKS |
| 4. ADDRESS (street and no. or R.F.D. no., city, state, and ZIP) 8111 Timberline Drive Bozeman, MT 59715 | | 5. PHONE (Include area code) (406)587-1218 | FOR OFFICIAL USE ONLY PVPO NUMBER: <div style="font-size: 24pt; text-align: center;">9500012</div> <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">FILING</div> <div> Date <u>Oct. 17, 1994</u> Time <input type="checkbox"/> A.M. <input checked="" type="checkbox"/> P.M. </div> </div> <div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">FEES</div> <div> Filing and Examination Fee: \$ <u>2325.00</u> Date <u>Oct. 17, 1994</u> Certificate Fee: \$ <u>300.00</u> Date <u>Oct. 2, 1995</u> </div> </div> |
| 6. GENUS AND SPECIES NAME Triticum aestivum | 7. FAMILY NAME (Botanical) Gramineae | | |
| 8. CROP KIND NAME (Common Name) Common wheat | 9. DATE OF DETERMINATION May 1, 1991 | | |
| 10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation | | | |
| 11. IF INCORPORATED, GIVE STATE OF INCORPORATION Arizona | | 12. DATE OF INCORPORATION August 24, 1990 | |

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Kim C. Shantz
Western Plant Breeders, 6720 West Chicago St. #4
Chandler, AZ 85226

PHONE (Include area code):

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow INSTRUCTIONS on reverse)

- a. ☒ Exhibit A, Origin and Breeding History of the Variety.
 b. ☒ Exhibit B, Novelty Statement.
 c. ☒ Exhibit C, Objective Description of Variety.
 d. ☐ Exhibit D, Additional Description of Variety.
 e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership.
 f. ☒ Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office _____
 g. ☒ Filing and Examination Fee (\$2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See section 83(a) of the Plant Variety Protection Act.)

☐ YES (If "YES," answer items 16 and 17 below) ☒ NO (If "NO," skip to item 18 below)

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?

☐ YES ☐ NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?

☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?

☐ YES (If "YES," through ☐ Plant Variety Protection Act ☐ Patent Act. Give date: _____)
☒ NO

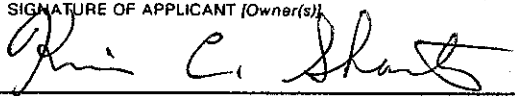

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?

☐ YES (If "YES," give names of countries and dates)
☒ NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

| | | |
|---|--------------------------------------|-----------------|
| SIGNATURE OF APPLICANT [Owner(s)]  | CAPACITY OR TITLE Wheat Breeder | DATE 9/16/94 |
| SIGNATURE OF APPLICANT [Owner(s)]  | CAPACITY OR TITLE General Manager | DATE 9-30-94 |

14a.

Origin and Breeding History

BROOKS is hard red spring wheat originating from the cross PH983-29/Yecora Rojo. The cross was made in Phoenix, Arizona in 1986 by Western Plant Breeders, Inc. The breeding method used was a modified bulk. The F1 was grown in Bozeman, Montana the summer of 1986. From the F2 grown in Phoenix, Arizona in 1987, selected heads were bulked and the resulting F3 was grown in Bozeman, Montana the summer of 1987. Individual heads were selected from this bulk and were grown as head rows at Phoenix in 1988. One plant, designated as PH988-131, was selected from the F4 row and was grown in a plot at Bozeman, Montana in 1988. The resulting F5 plot was harvested in bulk and yield tested in Arizona and California in 1989, 1990, 1991, and 1992. Thirty two heads (32) heads were selected in 1990 and were grown as headrows in Phoenix, Arizona in 1991. Ten headrows were selected and were grown in large plots at Bozeman in 1991. Eight of these plots were harvested separately and were seeded at Yuma, Arizona in 1992. Three of these large plots were selected at Yuma on the basis of uniformity and quality data and were bulked. This breeders' seed was used to seed ten acres of foundation seed production at Bozeman, Montana in May of 1992. A variant that is similar to Brooks, but is four to six inches taller, occurs at a frequency of .02%.

BROOKS is a stable and uniform cultivar in agronomic appearance and performance across several generations and growing conditions. Agronomic data to support stability is presented in the tables. The selection criteria used during the breeding of Brooks were high yield, high per cent protein, high test weight, semi-dwarf growth habit, acceptable flowering data, high sedimentation values, acceptable lodging resistance, good shatter tolerance and acceptable baking quality.

14b Novelty Statement

BROOKS is a day length insensitive, hard red spring wheat with an average height of 81 centimeters which is 2.5 centimeters taller than Yecora Rojo and 11 centimeters shorter than Yolo. Brooks most resembles Yecora Rojo but differs in that Brooks has white auricles while Yecora Rojo has red auricles. Brooks glume shoulder shape ranges from wanting to oblique while Yecora Rojo has elevated glume shoulders. Brooks has a twisted recurved flag leaf with waxy bloom. The stem is strong and white. The spike is awned long, wide, lax, and white with a fusiform shape. The awns are white and the spikes inclined at maturity. The glumes are white, long and wide with narrow shoulders. The beaks are midwide, acuminate, and very long. Brooks has long, wide and elliptical seed. The brushes are large but short. The seed crease is narrow and mid-deep. The cheeks are rounded and the germ size is large. The above comparisons along with the objective description (14c) show Brooks to be a novel variety of hard red spring wheat.

U. S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN AND SEED DIVISION
 BELTSVILLE, MARYLAND 20785

EXHIBIT C
 (Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
 WHEAT (TRITICUM SPP.)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

Western Plant Breeders

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

8111 Timberline Drive
 Bozeman, MT 59715

FOR OFFICIAL USE ONLY

PVPO NUMBER

VARIETY NAME OR TEMPORARY DESIGNATION

BROOKS

Place the appropriate number that describes the varietal character of this variety in the boxes below.
 Place a zero in first box (e.g., 0 8 9 or 0 9) when number is either 99 or less or 9 or less.

1. KIND:

1 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

1 1 = SPRING 2 = WINTER 3 = OTHER (Specify) 2 1 = SOFT 3 = OTHER (Specify)
 2 = HARD

2 1 = WHITE 2 = RED 3 = OTHER (Specify)

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO:

1 0 5 FIRST FLOWERING 1 1 0 LAST FLOWERING

4. MATURITY (50% Flowering):

6 NO. OF DAYS EARLIER THAN 8 1 = ARTHUR 2 = SCOUT 3 = CHRIS
 0 NO. OF DAYS LATER THAN 7 4 = LEMHI 5 = NUGAINE 6 = LEEDS
 7 = Yecora Rojo 8 = Express

5. PLANT HEIGHT (From soil level to top of head):

8 2 CM. HIGH 7 = Yecora Rojo
 3 CM. TALLER THAN 7 8 = Yolo
 1 1 CM. SHORTER THAN 8 1 = ARTHUR 2 = SCOUT 3 = CHRIS
 4 = LEMHI 5 = NUGAINE 6 = LEEDS

6. PLANT COLOR AT BOOTING (See reverse):

2 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHUR COLOR:

1 1 = YELLOW 2 = PURPLE

8. STEM:

1 Anthocyanin: 1 = ABSENT 2 = PRESENT 2 Waxy bloom: 1 = ABSENT 2 = PRESENT
 2 Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT 2 Internodes: 1 = HOLLOW 2 = SOLID
 4 NO. OF NODES (Originating from node above ground) 1 6 CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

1 Anthocyanin: 1 = ABSENT 2 = PRESENT 1 Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

2 Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 2 Flag leaf: 1 = NOT TWISTED 2 = TWISTED
 3 = OTHER (Specify): 2 Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
 1 Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
 1 6 MM. LEAF WIDTH (First leaf below flag leaf) 3 0 CM. LEAF LENGTH (First leaf below flag leaf):

11. HEAD:

 Density: 1 = LAX 2 = DENSE Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE
4 = OTHER (Specify) _____ Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED
5 = BROWN 6 = BLACK 7 = OTHER (Specify) _____ CM. LENGTH MM. WIDTH

12. GLUMES AT MATURITY:

 Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.)
3 = LONG (CA. 9 mm.) Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.)
3 = WIDE (CA. 4 mm.) Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED
4 = SQUARE 5 = ELEVATED 6 = APICULATE Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

 Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL Check: 1 = ROUNDED 2 = ANGULAR Brush: 1 = SHORT 2 = MEDIUM 3 = LONG Brush: 1 = NOT COLLARED 2 = COLLARED Phenol reaction (See Instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN
4 = BROWN 5 = BLACK Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____ MM. LENGTH MM. WIDTH GM. PER 1000 SEEDS

17. SEED CREASE:

 Width: 1 = 60% OR LESS OF KERNEL 'WINOKA'
2 = 80% OR LESS OF KERNEL 'CHRIS'
3 = NEARLY AS WIDE AS KERNEL 'LEMHI' Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT'
2 = 35% OR LESS OF KERNEL 'CHRIS'
3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

 STEM RUST (Race) LEAF RUST (Race) STRIPE RUST (Race) LOOSE SMUT POWDERY MILDEW BUNT OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

 SAWFLY APHID (Bydv.) GREEN BUG CEREAL LEAF BEETLE OTHER (Specify) _____

HESSIAN FLY

 GP A B C

RACES:

 D E F G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

| CHARACTER | NAME OF VARIETY | CHARACTER | NAME OF VARIETY |
|-----------------|-----------------|-----------------------|-----------------|
| Plant tillering | Yecora Rojo | Seed size | Yecora Rojo |
| Leaf size | Baker | Seed shape | Yecora Rojo |
| Leaf color | Baker | Coleoptile elongation | Yecora Rojo |
| Leaf carriage | WEstBred 911 | Seedling pigmentation | Yecora Rojo |

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggie and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

Table 1

Yield in pounds per acre of BROOKS and presently grown varieties in Western Plant Breeders' trials.

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Baker</u> |
|---------------------|-------------|---------------|--------------------|-------------|--------------|
| Phoenix, AZ | 1989 | 5376 | 4941 | 6246 | 4608 |
| | 1990 | 5821 | 4912 | 5632 | 5260 |
| | 1991 | 7923 | 7744 | 8602 | 7552 |
| | 1992 | 6689 | 6032 | 6801 | 6187 |
| Phoenix, Late AZ | 1990 | 5555 | 5440 | -- | 5338 |
| | 1991 | 7974 | 7501 | -- | 7411 |
| | 1992 | 5395 | 4832 | -- | 4008 |
| ElCentro, CA | 1990 | 6160 | 5540 | -- | 5560 |
| | 1991 | 6448 | 6425 | -- | 6244 |
| | 1992 | 5728 | 5854 | -- | 5652 |
| San Joaquin, CA | 1990 | 5986 | 5712 | -- | 5902 |
| | 1991 | 7151 | 7079 | -- | 7278 |
| | 1992 | 4195 | 3770 | 4408 | 3673 |
| Fresno, CA | 1990 | 7426 | 7249 | -- | 6800 |
| | 1991 | 4891 | 4524 | 5818 | 4605 |
| Davis, CA | 1991 | 8043 | 7512 | 8377 | 7648 |
| | 1992 | 5249 | 4887 | 6525 | -- |
| Sogetel, CA | 1991 | 7540 | 7178 | 7021 | 7032 |
| Yuma, AZ | 1992 | <u>6184</u> | <u>6300</u> | -- | 6387 |
| | | 6302 | 5970 | | |

Table 2

Percent protein of BROOKS and presently grown varieties in Western Plant Breeders' trials.

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Baker</u> |
|---------------------|-------------|---------------|--------------------|-------------|--------------|
| Phoenix, AZ | 1989 | 14.9 | 14.6 | 12.9 | 14.9 |
| | 1990 | 13.9 | 13.6 | 12.0 | 14.1 |
| | 1991 | 14.1 | 14.6 | 12.8 | 14.5 |
| | 1992 | 12.5 | 12.4 | 10.9 | 12.7 |
| Phoenix, Late AZ | 1990 | 14.3 | 13.4 | -- | 12.9 |
| | 1991 | 14.5 | 14.8 | -- | 15.0 |
| | 1992 | 14.0 | 14.3 | -- | 14.0 |
| El Centro, CA | 1990 | 12.2 | 12.3 | -- | 12.2 |
| | 1991 | 14.4 | 14.8 | -- | 15.0 |
| | 1992 | 15.0 | 15.0 | -- | 15.3 |
| San Joaquin, CA | 1990 | 14.1 | 13.0 | -- | 13.9 |
| | 1991 | 14.6 | 14.2 | -- | 13.5 |
| | 1992 | 15.9 | 16.5 | 13.9 | -- |
| Fresno, CA | 1990 | 11.9 | 11.1 | -- | 12.5 |
| | 1991 | 11.7 | 12.0 | 9.2 | 12.1 |
| Davis, CA | 1991 | 11.2 | 10.3 | 9.5 | 10.7 |
| | 1992 | 11.8 | 12.1 | 10.6 | -- |
| Sogetel, CA | 1991 | 12.2 | 11.5 | 11.0 | 12.1 |
| Yuma, AZ | 1992 | <u>15.0</u> | <u>15.0</u> | -- | 14.9 |
| | | 13.6 | 13.4 | | |

Table 3

Plant Height of BROOKS and presently grown varieties in Western Plant Breeders' trials.

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Baker</u> |
|---------------------|-------------|---------------|--------------------|-------------|--------------|
| Phoenix, AZ | 1989 | 27 | 27 | 32 | 24 |
| | 1990 | 33 | 32 | 36 | 32 |
| | 1991 | 37 | 35 | 42 | 34 |
| | 1992 | 35 | 33 | 38 | 32 |
| Phoenix, Late AZ | 1990 | 31 | 29 | -- | 31 |
| | 1991 | 35 | 33 | -- | 33 |
| El Centro, CA | 1990 | 29 | 30 | -- | 27 |
| | 1991 | 33 | 33 | -- | 31 |
| | 1992 | 33 | 35 | -- | 34 |
| San Joaquin, CA | 1990 | 30 | 28 | -- | 28 |
| | 1991 | 36 | 35 | -- | 35 |
| | 1992 | 32 | 30 | 36 | -- |
| Fresno, CA | 1990 | 27 | 28 | -- | 27 |
| | 1991 | 27 | 24 | 33 | 25 |
| Davis, CA | 1992 | 34 | 33 | 38 | -- |
| Sogetal, CA | 1991 | 36 | 35 | 39 | 32 |
| | | 32.2 | 31.3 | | |

Table 4

Days to anthesis after March 1 of BROOKS and presently grown varieties in Western Plant Breeders' trials.

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Baker</u> |
|-----------------|-------------|---------------|--------------------|-------------|--------------|
| Phoenix, AZ | 1989 | 14 | 14 | 19 | 16 |
| | 1990 | 20 | 21 | 27 | 22 |
| | 1991 | 28 | 27 | 34 | 26 |
| | 1992 | 15 | 14 | 23 | 15 |

Table 5

Test weight in pounds/bushel of BROOKS and presently grown varieties in Western Plant Breeders' trials.

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Baker</u> |
|---------------------|-------------|---------------|--------------------|-------------|--------------|
| Phoenix, AZ | 1989 | 62.4 | 63.5 | 62.5 | 62.4 |
| | 1990 | 61.5 | 62.8 | 62.5 | 62.4 |
| | 1991 | 63.4 | 64.3 | 63.6 | 63.5 |
| | 1992 | 62.7 | 63.0 | 62.9 | 62.8 |
| Phoenix, Late AZ | 1990 | 58.2 | 60.4 | -- | 61.5 |
| | 1991 | 63.0 | 61.2 | -- | 61.5 |
| | 1992 | 60.5 | 60.7 | -- | 60.2 |
| ElCentro, CA | 1990 | 62.6 | 62.2 | -- | 63.7 |
| | 1991 | 64.3 | 64.2 | -- | 63.9 |
| | 1992 | 60.7 | 60.4 | -- | 61.3 |
| San Joaquin, CA | 1990 | 63.2 | 64.3 | -- | 63.8 |
| | 1991 | 62.5 | 64.2 | -- | 64.2 |
| | 1992 | 58.0 | 58.5 | 58.9 | -- |
| Fresno, CA | 1990 | 61.7 | 63.3 | -- | 62.1 |
| | 1991 | 65.3 | 65.3 | 63.3 | 64.6 |
| Davis, CA | 1991 | 64.1 | 65.3 | 64.3 | 64.6 |
| | 1992 | 63.8 | 64.4 | 64.0 | -- |
| Sogetal, CA | 1991 | 63.1 | 64.8 | 63.5 | 64.6 |
| Yuma, AZ | 1992 | <u>59.4</u> | <u>60.8</u> | -- | 60.3 |
| | | 62.1 | 62.8 | | |

Table 6

S.D.S. sedimentation values in millimeters of BROOKS and presently grown varieties in Western Plant Breeders' trials.

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Baker</u> |
|---------------------|-------------|---------------|--------------------|-------------|--------------|
| Phoenix, AZ | 1989 | 76 | 76 | 59 | 72 |
| | 1990 | 81 | 80 | 50 | 81 |
| | 1991 | 103 | 101 | 58 | 108 |
| | 1992 | 79 | 75 | 51 | 72 |
| Phoenix, Late AZ | 1990 | 85 | 80 | -- | 71 |
| | 1991 | 89 | 92 | -- | 90 |
| | 1992 | 87 | 88 | -- | 91 |
| El Centro, CA | 1990 | 82 | 89 | -- | 93 |
| | 1991 | 103 | 113 | -- | 108 |
| | 1992 | 94 | 90 | -- | 81 |
| San Joaquin, CA | 1990 | 101 | 89 | -- | 95 |
| | 1991 | 105 | 101 | -- | 96 |
| | 1992 | 111 | 113 | 83 | -- |
| Fresno, CA | 1990 | 81 | 78 | -- | 82 |
| | 1991 | 91 | 90 | 54 | 90 |
| Davis, CA | 1991 | 74 | 71 | 45 | 73 |
| | 1992 | 87 | 92 | 68 | -- |
| Sogetal, CA | 1991 | 91 | 87 | 63 | 89 |
| Yuma, AZ | 1992 | <u>80</u> | <u>79</u> | -- | <u>78</u> |
| | | 89.5 | 88.1 | | |

Table 7

Percent lodging of BROOKS and presently grown varieties in Western Plant Breeders' trials.

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Baker</u> |
|---------------------|-------------|---------------|--------------------|-------------|--------------|
| Phoenix, AZ | 1990 | 43 | 58 | 75 | 88 |
| Phoenix, Late AZ | 1991 | 3 | 8 | -- | 5 |
| El Centro, CA | 1991 | 0 | 10 | -- | 10 |
| Fresno, CA | 1990 | 33 | 20 | -- | 40 |
| Yuma | 1992 | 67 | 53 | -- | 73 |

Table 8

Disease resistance of BROOKS and presently grown varieties in Western Plant Breeders' trials. *

| <u>Septoria</u> | | | | | |
|--------------------|-------------|---------------|--------------------|-------------|------------------------------------|
| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | |
| Davis, CA | 1991 | 2.6 | 3.1 | 1.5 | |
| Sogetal, CA | 1991 | 2.0 | 2.8 | 1.8 | |
| <u>Leaf Rust</u> | | | | | |
| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Susceptible Check DA990-131</u> |
| SanJoaquin, CA | 1992 | 2.8 | 5.3 | 1.5 | 9.0 |
| Yuma, AZ | 1992 | 8.0 | 8.0 | -- | 9.0 |
| Isleton, CA | 1992 | 0 | 0 | 0 | 9.0 |
| <u>Stripe Rust</u> | | | | | |
| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Susceptible Check WRP-9-5</u> |
| Isleton, CA | 1992 | 0 | 0 | 0 | 8.0 |
| Davis, CA | 1992 | 0 | 0 | 0 | 2.0 |

* 0 = none

9 = dead

Table 9

Disease resistance of CORTEZ and presently grown varieties in
University of California Extension Trials.

Septoria

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Tadinia</u> |
|-----------------|-------------|---------------|--------------------|-------------|----------------|
| Butte | 1992 | 3.0 | 1.8 | 1.3 | 1.0 |
| Sutter | 1992 | 1.3 | 1.3 | 1.0 | 1.0 |
| U.C.Davis | 1992 | 2.5 | 3.0 | 1.3 | 1.0 |
| Delta | 1992 | 3.3 | 2.8 | 1.0 | 1.0 |
| U.C.Davis | 1991 | 2.0 | 1.3 | 1.0 | 1.0 |

Leaf Rust

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | <u>Tadinia</u> |
|-----------------|-------------|---------------|--------------------|-------------|----------------|
| U.C. Davis | 1992 | 1.5 | 1.5 | 1.0 | 1.3 |
| Delta | 1992 | 1.3 | 2.3 | 1.0 | 2.0 |
| Merced | 1992 | 1.0 | 1.8 | 1.3 | 1.8 |
| Kings | 1992 | 1.3 | 4.3 | 2.3 | 3.8 |

Stripe Rust

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> | Susceptible Check <u>WRP-9-5</u> |
|-----------------|-------------|---------------|--------------------|-------------|--|
| SanLuis | | | | | |
| Abispo | 1992 | 3.0 | 1.0 | 1.0 | -- |
| U.C.Davis | 1991 | 1.0 | 1.0 | 1.0 | 1.3 |
| Delta | 1991 | 1.8 | 1.3 | 1.0 | 4.0 |

| <u>Location</u> | <u>Year</u> | <u>Tadinia</u> |
|-----------------|-------------|----------------|
| San Luis Abispo | 1992 | 1.0 |
| U.C. Davis | 1991 | 1.0 |
| Delta | 1991 | 1.0 |

1 = 0% - 3% area of flag leaf affected

2 = 4% - 14%

3 = 15% - 29%

4 = 30% - 49%

Table 10

Milling and baking quality of BROOKS and Yecora Rojo. *

| | <u>BROOKS</u> | | | <u>Yecora Rojo</u> | | |
|------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | <u>1991 Kings</u> | <u>U.C. Davis</u> | <u>1992 Kings</u> | <u>1991 Kings</u> | <u>U.C. Davis</u> | <u>1992 Kings</u> |
| Protein | 13.4 | 13.2 | 14.6 | 12.9 | 13.1 | 14.6 |
| Flour Yd | 72.7 | 72.4 | 68.1 | 71.9 | 72.2 | 68 |
| Wet Gluten | 27.7 | 26.9 | 35.4 | 27.5 | 29.2 | 34.7 |
| Absorption | 63.0 | 61.2 | 62.8 | 60.6 | 59.9 | 61.6 |
| Arrival | 1.5 | 2.0 | 7.0 | 1.0 | 2.5 | 7.0 |
| Mix peak | 7.5 | 5.0 | 15.5 | 5.5 | 8.0 | 17.5 |
| Mix Tolerance | 11.5 | 11.3 | 17.5 | 14.5 | 12.0 | 17.0 |
| M.T.I. | 40 | 30 | 10 | 20 | 20 | 20 |
| Loaf Volu | 900 | 895 | 990 | 860 | 950 | 970 |
| Texture | 5 | 5 | 5 | 5 | 5 | 5 |
| Score | 4 | 4 | 5 | 3 | 5 | 5 |

Quality analysis performed by California Wheat Commission. Absorption, arrival, mix peak, mix tolerance, and M.T.I. (mixing tolerance index) are from the farinograph.

Score: 5= excellent, 4= satisfactory, 3= satisfactory - questionable

Table 11

Percent shatter of BROOKS, Yecora Rojo, and Yolo.

Western Plant Breeders' Trials

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> |
|-----------------|-------------|---------------|--------------------|-------------|
| Phoenix - 1 | 1992 | 0 | 2 | 1 |
| Phoenix - 2 | 1992 | .3 | 2 | -- |
| Davis | 1992 | 0 | 2 | 0 |

University of California Extension Trials

| <u>Location</u> | <u>Year</u> | <u>BROOKS</u> | <u>Yecora Rojo</u> | <u>Yolo</u> |
|-----------------|-------------|---------------|--------------------|-------------|
| Delta | 1992 | 0 | 1 | 0 |
| Imperial | 1992 | 0 | 0 | 1 |



Western Plant Breeders

"Breeders of WestBred™ Varieties"

April 29, 1995

Mr. Alan A. Atchley
USDA/AMS/SD
Plant Variety Protection Office
10301 Baltimore Blvd.
Beltsville, MD 20705-2351

SUBJECT: PV Application No. 9500012, Wheat Variety 'Brooks'

Dear Alan:

Revised Exhibit E: The variety 'Brooks' for which Plant Variety Protection is hereby sought was developed by Kim C. Shantz, an employee of Western Plant Breeders, Inc., all rights to any invention, discovery, or development made by the employee while employed by Western Plant Breeders, Inc. were assigned to Western Plant Breeders, Inc. with no rights of any kind retained by the employee.

Western Plant Breeders, Inc. requests that 'Brooks' be given Plant Variety Protection under the revised PVP act of 1994.

Sincerely,

Kim Shantz
Wheat Breeder

KS/ks